

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a **Minor, Municipal** permit. The discharge results from the operation of a 0.005 MGD wastewater treatment plant. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq.

1. Facility Name and Mailing Address: Rappahannock County HS
6 Schoolhouse Road
Washington, VA 22747

SIC Code: 4952 (WWTP)

Facility Location: 12576 Lee Highway
Washington, VA 22747
County: Rappahannock

Facility Contact Name: Donald F. Hearl
Telephone Number: 540-825-6660
2. Permit Number: VA0064181
Expiration Date: 6/23/2009

Other VPDES Permits: None
Other Permits: None
E2/E3/E4 Status: N/A
3. Owner Name: Rappahannock County School Board
Owner Contact/Title: Dr. Robert Chappell
Telephone Number: 540-987-8773
4. Application Complete Date: 4/15/2009
Permit Drafted By: Anna Westernik
Date Drafted: 6/10/2009
Draft Permit Reviewed By: Alison Thompson
Date Reviewed: 6/11/2009
Public Comment Period: Start Date: 8/13/2009
End Date: 9/12/2009
5. Receiving Waters Information: See **Attachment 1** for the Flow Frequency Determination
Receiving Stream Name: Covington River, UT
Drainage Area at Outfall: 0.56 square miles
River Mile: 0.05
Stream Basin: Rappahannock River
Subbasin: Rappahannock River
Section: 4
Stream Class: III
Special Standards: None
Waterbody ID: VAN-E05R
7Q10 Low Flow: 0.0 MGD
7Q10 High Flow: 0.0 MGD
1Q10 Low Flow: 0.0 MGD
1Q10 High Flow: 0.0 MGD
Harmonic Mean Flow: 0.0 MGD
30Q5 Flow: 0.0 MGD
30Q10 Flow: 0.0 MGD

1/23/2008
TMDL Approved: Yes
Date TMDL Approved: Downstream TMDL for the Hazel River
6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

<u>✓</u> State Water Control Law <u>✓</u> Clean Water Act <u>✓</u> VPDES Permit Regulation <u>✓</u> EPA NPDES Regulation	<u>✓</u> EPA Guidelines <u>✓</u> Water Quality Standards <u> </u> Other (<i>PES, Occoquan Policy, Dulles</i>)
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7. Licensed Operator Requirements: None
8. Reliability Class: Class II

9. Permit Characterization:

<input type="checkbox"/> Private	<input type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input checked="" type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input checked="" type="checkbox"/> TMDL		

10. Wastewater Sources and Treatment Description:

The treatment system at this facility consists of a grease trap, a septic tank, a dosing chamber, a distribution box, three sand beds, chlorination, dechlorination, and post-aeration. The wastewater flows into the grease trap, the septic tank, and then the dosing chamber. Light soda ash is added manually to the dosing chamber for pH control. Dosing bells automatically send flow from the dosing chamber to the distribution box and then the sand filters. After the sand filters, the sewage effluent is chlorinated and dechlorinated using tablets and then post-aerated before discharge. Compliance sampling is conducted at the v-notch wier after post-aeration. The following is a brief description of the components of the treatment system:

Grease Trap:	Removes lighter fluids (e.g., grease and oil) from the waste stream.
Septic Tank:	Primary treatment to remove floatable and settleable solids.
Dosing Tank:	Provides a uniform application of sewage at intermittent intervals utilizing a siphon.
Sand Filter Bed:	Consists of level areas of finely graded sand with gravel and underdrains. Treatment consists of filtration, nitrification, and denitrification.
Chlorination:	Chlorination reduces the level of bacteria in the effluent.
Dechlorination:	Dechlorination removes chlorine from the discharge.
Post-Aeration:	Post-aeration increases the dissolved oxygen level in the discharge.

See **Attachment 2** -- Facility schematic.

TABLE 1
Outfall Description

Outfall Number	Discharge Sources	Treatment	Design Flow	Outfall Latitude and Longitude
001	Municipal Wastewater Discharge from a Public School	See Item 10 above.	0.005 MGD	38° 41' 07" N 78° 11' 21" W (Confirmed via GPS 3/17/1999)

See **Attachment 3** for topographic map 197B (Washington).

11. Sludge Treatment and Disposal Methods:

Solids from this facility are collected in a septic tank. The septage is removed once to twice per year and is shipped to the Remington WWTP for disposal (VA0076805).

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge:

TABLE 2		
RIVER MILE	DISCHARGE DESCRIPTION	LATITUDE/ LONGITUDE
6.83 (Rush River)	Industrial Discharge from the Town of Washington WTP (VA0087851)	38° 43' 20" N 78° 09' 46" W
5.22 (Rush River)	Municipal Discharge from the Rush River Wastewater Treatment Plant (VA0091651)	38° 42' 47.4" N 78° 09' 4.1" W
0.05 (Covington River, UT)	Municipal Discharge from the Rappahannock County High STP (VA0064181)	38° 41' 07" N 78° 11' 21" W
2.08 (Rush River)	Municipal Discharge from the Rappahannock County Elementary School STP (VA0022471)	38° 41' 10" N 78° 10' 37" W
22.15 (Thornton River)	Municipal Discharge from the Town of Sperryville STP (VA0062880)	38° 39' 29" N 78° 13' 09" W
14.37 (Thornton River)	Ambient Monitoring Station 3-THO014.37	38° 39' 15.3" N 78° 07' 52" W
6.50 (Thornton River)	Ambient Monitoring Station 3-THO06.50	38° 37' 41" N 78° 03' 48" W

- 13. Material Storage:** Table 3 below is a list of chemicals stored at the sewage treatment plant. Spill from these chemicals is contained through storage within a building at the sewage treatment plant.

TABLE 3 – Chemical Storage	
CHEMICAL	QUANTITY STORED
Calcium Hypochlorite Tablets (70% Active)	Two 45-pound buckets
Sodium Sulfite Tablets	Two 45-pound buckets
Light Soda Ash	Ten 50-pound bags

- 14. Site Inspection:** See inspection summary from inspection conducted on May 22, 2008 (**Attachment 4**).

15. Receiving Stream Water Quality and Water Quality Standards:**a. Ambient Water Quality Data**

The receiving stream flows to the Covington River, the Rush River, the Thornton River, the Hazel River, and then the Rappahannock River. The receiving stream is not monitored and is not listed in the current 2008 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report (IR). The nearest downstream monitoring station is DEQ ambient water quality station 3-THO006.50, located on the Thornton River at the Route 729 bridge crossing. This monitoring station is located approximately 13.2 miles downstream of Outfall 001 for the Rappahannock County High School STP. The 2008 Virginia Water Quality Assessment 305(b)/303(d) IR states that *E. coli* monitoring found a bacterial impairment, resulting in an impaired classification for recreation use. Aquatic life and wildlife uses are considered fully supporting. Additionally, a segment of the Hazel River is listed as not supporting the recreational use due to excursions from the instantaneous *E. coli* bacteria criterion recorded at DEQ's ambient water quality monitoring station 3-HAZ005.98 at the Route 625 crossing. See **Attachment 5** for the planning statement summary.

b. Receiving Stream Water Quality Criteria

Part IX of 9 VAC 25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Covington River, UT is located within Section 4 of the Rappahannock River Basin, and classified as Class III water.

At all times, Class III waters must achieve dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0 – 9.0 standard units (S.U.).

Attachment 6 details other water quality criteria applicable to the receiving stream.

- 1) Ammonia:
Staff has re-evaluated the effluent data for pH and temperature for the period of April 2008 through April 2009 and finds no significant differences from the data used to establish ammonia criteria and subsequent effluent limits in the previous permit. Therefore, the previously established pH and temperature values will be carried forward as part of this reissuance process.

- 2) Bacteria Criteria:
The Virginia Water Quality Standards (9 VAC 25-260-170 B.) states sewage discharges shall be disinfected to achieve the following criteria:

E. coli bacteria per 100 mL of water shall not exceed the following:

	Geometric Mean ¹	Single Sample Maximum
Freshwater <i>E. coli</i> (N/100 mL)	126	235

¹For two or more samples [taken during any calendar month]

c. Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9 VAC 25-260-360, 370 and 380) designates the river basins, sections, classes and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Covington River, UT, is located within Section 4 of the Rappahannock River Basin. This section does not have a designated special standard.

d. Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched for records to determine if there are threatened or endangered species in the vicinity of the discharge (see **Attachment 7**). The following threatened or endangered species were identified within a 2 mile radius of the discharge: Shenandoah Salamander, Peregrine Falcon, Upland Sandpiper, Loggerhead Shrike, Appalachian Grizzled Skipper, and the Migrant Loggerhead Shrike. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and therefore protect the threatened and endangered species found near the discharge.

16. Antidegradation (9 VAC 25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The Rappahannock County High School STP discharges to an unnamed tributary the Covington River. The receiving stream has been classified as Tier 1 because it is intermittent and therefore, has exhibited a lack of flow during drought conditions (e.g., 7Q10 = 0.0 MGD). Permit limits have been established by determining wasteload allocations that will result in attaining and/or maintaining all water quality criteria applicable to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case, since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. In the case of ammonia evaluations, limits are needed if the 97th percentile of the thirty-day average effluent concentration values is greater than the chronic WLA. Effluent limitations are based on the most limiting WLA, the required sampling frequency and statistical characteristics of the effluent data.

a. Wasteload allocations (WLAs)

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:

- WLA = Wasteload allocation
- C_o = In-stream water quality criteria
- Q_e = Design flow
- f = Decimal fraction of critical flow from mixing evaluation
- Q_s = Critical receiving stream flow
(1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; 30Q10 for ammonia criteria; and 30Q5 for non-carcinogen human health criteria)
- C_s = Mean background concentration of parameter in the receiving stream

Since the low flows of this receiving stream are 0.0 MGD, the WLA will equate to the water quality criteria.

Staff derived wasteload allocations where parameters are reasonably expected to be present in an effluent (e.g., total residual chlorine where chlorine is used as a means of disinfection) and where effluent data indicate the pollutant is present in the discharge above quantifiable levels. With regard to the Outfall 001 discharge, ammonia as N is likely present since this is a WWTP treating sewage and total residual chlorine (TRC) may be present since chlorine is used for disinfection.

Attachment 6 details the WLA derivations for these pollutants.

a. Effluent Limitations, Outfall 001 – Toxic Pollutants

9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9 VAC 25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N:

Staff evaluated new effluent data from April 2008 through April 2009 and has concluded it is not significantly different than what was used to derive the existing ammonia limits (**Attachment 8**). Therefore, existing ammonia limitations are proposed to continue in the reissued permit.

A comparison of the influent and effluent ammonia samples collected show that minimal treatment for ammonia is occurring at this facility. To ensure that ammonia levels discharged to the receiving stream are not detrimental, the frequency of effluent sampling for ammonia shall be increased to twice per month if three consecutive sampling events exceed either the weekly or monthly average. The influent samples must be collected twice per year while school is in session and on the same date as the effluent sample.

2) Total Residual Chlorine:

Chlorine is used for disinfection and is potentially in the discharge. Staff calculated WLAs for TRC using current critical flows and the mixing allowance. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. A monthly average of 0.009 mg/L and a weekly average limit of 0.011 mg/L are proposed for this discharge (see **Attachment 9**).

b. Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day (BOD₅), total suspended solids (TSS), and pH limitations are proposed. TSS limits equal BOD₅ limits since the two pollutants are closely related in terms of treatment of domestic sewage. pH limitations are set at the Virginia water quality criteria, which equate to the Federal Secondary Treatment Standards. DO limitations are based on a stream model for the unnamed tributary of the Covington River dated July 20, 1978. This stream model concluded that a monthly BOD₅ discharge of 20 mg/L and a DO discharge of 6.0 mg/L would protect the DO criteria for the receiving stream. Due to the intermittent nature of the discharge, staff believes that the DO model used to derive the BOD limits is no longer valid. However, the facility has been operating with the current BOD₅ and DO limits for years with no apparent detrimental effect the receiving stream. As such, staff believes that the current BOD₅ and DO limits protect the DO criterion and no further evaluation of these limits is necessary at this time.

Quarterly sampling for *E. coli* will be required to determine the effectiveness of disinfection since discharge from the Rappahannock County High School STP flows into a segment of the Thornton River that is impaired for *E. coli*. The facility will be required to sample annually for influent BOD₅ and ammonia and twice per year for oil and grease during the school year (Jan – May and Sep – Dec) due to high influent BOD₅ levels entering the plant, high levels of ammonia found in the effluent, and problems observed with oil and grease accumulation in the septic tank.

c. Effluent Limitations and Monitoring Summary

The effluent limits and monitoring requirements are presented in Section 19 of this fact sheet. Limits were established for flow, effluent BOD₅, TSS, ammonia as N, pH, DO, TRC, and *E. coli*. Monitoring for influent BOD₅, ammonia as N, and oil and grease is required.

- The limits for effluent BOD₅ are based on a stream model, and the Virginia Water Quality Standards.
- The limits for TSS are based on the Federal Secondary Treatment Standards and best professional judgment.
- The limits for ammonia are based on the Virginia Water Quality Standards.
- The limits for pH are based on the Federal Secondary Treatment Standards and the Virginia Water Quality Standards.
- The limits for DO are based on a stream model and the Virginia Water Quality Standards.
- The limits for TRC are based on the VA Water Quality Standards.
- The *E. coli* limit is based on the Virginia Water Quality Standards (9 VAC 25-260).
- Monitoring for influent BOD₅, ammonia, and oil and grease is based on best professional judgment.

The mass loading (kg/d), for monthly and weekly averages, were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

The VPDES Permit Regulation at 9 VAC 25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD₅ and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal based on an average influent BOD₅ of 590 mg/L obtained from influent monitoring for BOD₅ conducted from January 2005 to August 2008. As stated previously, TSS limits equal BOD₅ limits since the two pollutants are closely related in terms of treatment of domestic sewage. Therefore, the assumption can be made that greater than 85% removal of TSS is occurring.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

VPDES PERMIT PROGRAM FACT SHEET

VA0064181
PAGE 7 of 1019. **Effluent Limitations/Monitoring Requirements:**

Design flow of this Municipal Facility is 0.005 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the permit's expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	N/A	N/A	NL	1/D	Estimate
Influent BOD ₅	4	N/A	N/A	N/A	NL	1/Y	Grab
Effluent BOD ₅	2,3	20 mg/l - 0.4 kg/day	30 mg/l - 0.6 kg/day	N/A	N/A	1/M	Grab
TSS	1,4	20 mg/l - 0.4 kg/day	30 mg/l - 0.6 kg/day	N/A	N/A	1/M	Grab
Influent Ammonia as Nitrogen	4	N/A	N/A	N/A	NL	2/Y ^a	Grab
Effluent Ammonia as Nitrogen	3	22 mg/l	22 mg/l	N/A	N/A	1/M ^b	Grab
pH	1,3	N/A	N/A	6.0 SU	9.0 SU	1/D	Grab
DO	2,3	N/A	N/A	6.0 mg/l	N/A	1/D	Grab
TRC (after chlorine contact tank)	5	N/A	N/A	1.0 mg/l	N/A	1/D	Grab
TRC (after dechlorination)	3	0.009 mg/l	0.011 mg/l	N/A	N/A	1/D	Grab
Influent Oil and Grease	4	N/A	N/A	N/A	NL	2/Y ^c	Grab
<i>E. coli</i>	3	126 n/100ml	N/A	N/A	N/A	2/M ^d	Grab

The basis for the limitations codes are:

- | | | |
|---|---|--------------------------------|
| 1. Federal Secondary Treatment Standards (40 CFR 133.102) | <i>MGD</i> = Million gallons per day. | <i>1/D</i> = Once every day. |
| 2. Stream Model | <i>N/A</i> = Not applicable. | <i>1/Y</i> = Once every year. |
| 3. VA Water Quality Standards | <i>NL</i> = No limit; monitor and report. | <i>1/M</i> = Once every month. |
| 4. Best Professional Judgment | <i>SU</i> = Standard units. | <i>2/Y</i> = Twice every year. |
| 5. VDH-DEQ Disinfection Policy | | <i>2/M</i> = See "d" below. |

Grab = An individual sample collected over a period not to exceed 15-minutes.

- One sample is to be collected during Jan – May and another sample is to be collected during Sep – Dec. This sample must be collected on the same date as the effluent ammonia sample while school is in operation.
- Sampling frequency shall be increased to twice per month if three consecutive samples exceed the monthly or weekly average for ammonia.
- One sample is to be collected during Jan – May and another sample is to be collected during Sep – Dec. Both samples may not be collected in the same period. The permittee shall collect two (2) samples, greater than seven (7) days apart, during one month within each quarterly monitoring period as defined in this paragraph. The results shall be reported as the geometric mean. Sampling shall be conducted during the calendar quarters (Jan - Mar, Apr - Jun, Jul - Sep, Oct - Nov). The results of quarterly sampling shall be received by DEQ-NRO with the DMR on April 10, July 10, October 10, and January 10.

20. Other Permit Requirements:

- a. Part I.B. of the permit contains additional chlorine monitoring requirements, quantification levels and compliance reporting instructions.

Minimum chlorine residual must be maintained at the exit of the chlorine contact tank to assure adequate disinfection. No more than 3 of the monthly test results for TRC at the exit of the chlorine contact tank shall be < 1.0 mg/L with any TRC < 0.6 mg/L considered a system failure.

9 VAC 25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions:

- a. 95% Capacity Reopener. The VPDES Permit Regulation at 9 VAC 25-31-200.B.2. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.
- b. Indirect Dischargers. Required by VPDES Permit Regulation, 9 VAC 25-31-280 B.9 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.
- c. O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190.E. Within 90 days of the effective date of this permit, the permittee shall submit for approval an Operations and Maintenance (O&M) Manual or a statement confirming the accuracy and completeness of the current O&M Manual to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO). Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- d. CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- e. Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9 VAC 25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) requires licensure of operators. Based on the treatment design and design flow, a licensed wastewater operator is not required at this facility.
- f. Reliability Class. The Sewage Collection and Treatment Regulation at 9 VAC 25-790 requires sewerage works achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. The facility is required to meet reliability Class II.
- g. Sludge Reopener. The VPDES Permit Regulation at 9 VAC 25-31-200.C.4. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.
- h. Sludge Use and Disposal. The VPDES Permit Regulation at 9 VAC 25-31-100.P., 220.B.2., and 420-720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.
- i. TMDL Reopener. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL that may be developed and approved for the receiving stream.

22. Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

- a. Special Conditions:
 - 1) The CTC, CTO Requirement has been added.
 - 2) The Sludge Reopener Special Condition has been added.
 - 3) The Sludge Use and Disposal Special Condition has been added.
- b. Monitoring and Effluent Limitations:
 - 1) Monitoring for *E. coli* has been changed to once per quarter to twice per month within each quarter.
 - 2) Monitoring for effluent ammonia can be increased to twice per month if three consecutive sampling events exceed the monthly or weekly limit.
 - 3) Monitoring for influent ammonia has been increased to twice per year.
 - 4) The Special Standard NEW-15 has been removed due to its being repealed from the Virginia Water Quality Standards.

24. Variances/Alternate Limits or Conditions: None**25. Public Notice Information:**

First Public Notice Date: 8/12/2009 Second Public Notice Date: 8/19/2009

Public Notice Information is required by 9 VAC 25-31-280 B. All pertinent information is on file and may be inspected and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3837, anna.westernik@deq.virginia.gov. See **Attachment 10** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action and may request a public hearing during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

The Rappahannock County High School STP discharges to an unnamed tributary of the Covington River. The Covington River flows to the Thornton and Hazel Rivers, which have recreational impairments for *E. coli*. The receiving stream assessment unit will not be included in the TMDL for the Thornton or Hazel River. However, all upstream facilities are included during WLA consideration. The Rappahannock County High School STP was given a WLA for *E. coli* of 8.66E+9 cfu/year for the Hazel River impairment. The Thornton River TMDL is not due until 2018. This permit requires quarterly sampling for *E. coli*.

27. Additional Comments:

Previous Board Action(s): This facility was referred to enforcement on May 12, 2004 due to exceedances of the BOD₅ permit limit. It was dereferred on November 16, 2004 because compliance was achieved through informal action.

This facility was referred to enforcement again on March 9, 2005 due to exceedances of the BOD₅, TSS, ammonia, and *E. coli* permit limits. A consent order was executed on March 17, 2006. The order was terminated on June 9, 2008 after the facility completed all the Appendix A items.

Staff Comments: High staff workload due to budget issues has resulted in this permit being reissued late.

Public Comment: No comments were received during the public notice period.

EPA Checklist: The checklist can be found in **Attachment 11**.

List of Attachments

Attachment 1	Flow Frequency Determination Memo
Attachment 2	Treatment System Schematic/Flow Diagram
Attachment 3	Topographic map 197B (Washington)
Attachment 4	Inspection Summary From May 22, 2008 Inspection
Attachment 5	Planning Summary
Attachment 6	Virginia Water Quality Criteria and WLAs
Attachment 7	Virginia DGIF Fish and Wildlife Information System Database Information
Attachment 8	90 th Percentile pH and Temperature Calculations (April 2008-April 2009)
Attachment 9	Derivation of Ammonia and TRC Limits
Attachment 10	Public Notice
Attachment 11	EPA Checklist

MEMORANDUM
DEPARTMENT OF ENVIRONMENTAL QUALITY
Water Quality Assessments and Planning
629 East Main Street P.O. Box 10009 Richmond, Virginia 23219

SUBJECT: Flow Frequency Determination
Rappahannock County High School - #VA0064181

TO: Doug Stockman, NRO

FROM: Paul E. Herman, P.E., WQAP *Paul*

DATE: December 8, 1998

COPIES: Ron Gregory, Charles Martin, File

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DEC 10 1998

Northern VA. Region
Dept. of Env. Quality

This memo supersedes my January 10, 1994 memo to Jan Pickrel concerning the subject VPDES permit.

The Rappahannock County High School discharges to an unnamed tributary of the Covington River. Flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The values at the discharge point were determined by inspection of the USGS Washington Quadrangle topographic map which shows the receiving stream as intermittent at the discharge point. The flow frequencies for intermittent streams are 0.0 cfs for the 1Q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and harmonic mean. The drainage area above the discharge point is 0.12 mi². For modeling purposes, flow frequencies have been determined for the first perennial reach downstream of the discharge point.

The VDEQ operated a continuous record stream gage on the Rush River at Washington, VA (#01662500) from 1953 to 1977. The gage was located at the Route 211/522 bridge near at Washington, VA. The flow frequencies for the gage and the perennial point are presented below. The values at the perennial point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs which may lie upstream of the perennial point.

Rush River at Washington, VA (#01662500):

Drainage Area = 14.7 mi ²	
1Q10 = 0.0 cfs	High Flow 1Q10 = 1.4 cfs
7Q10 = 0.0 cfs	High Flow 7Q10 = 1.8 cfs
30Q5 = 0.335 cfs	HM = 0.0 cfs

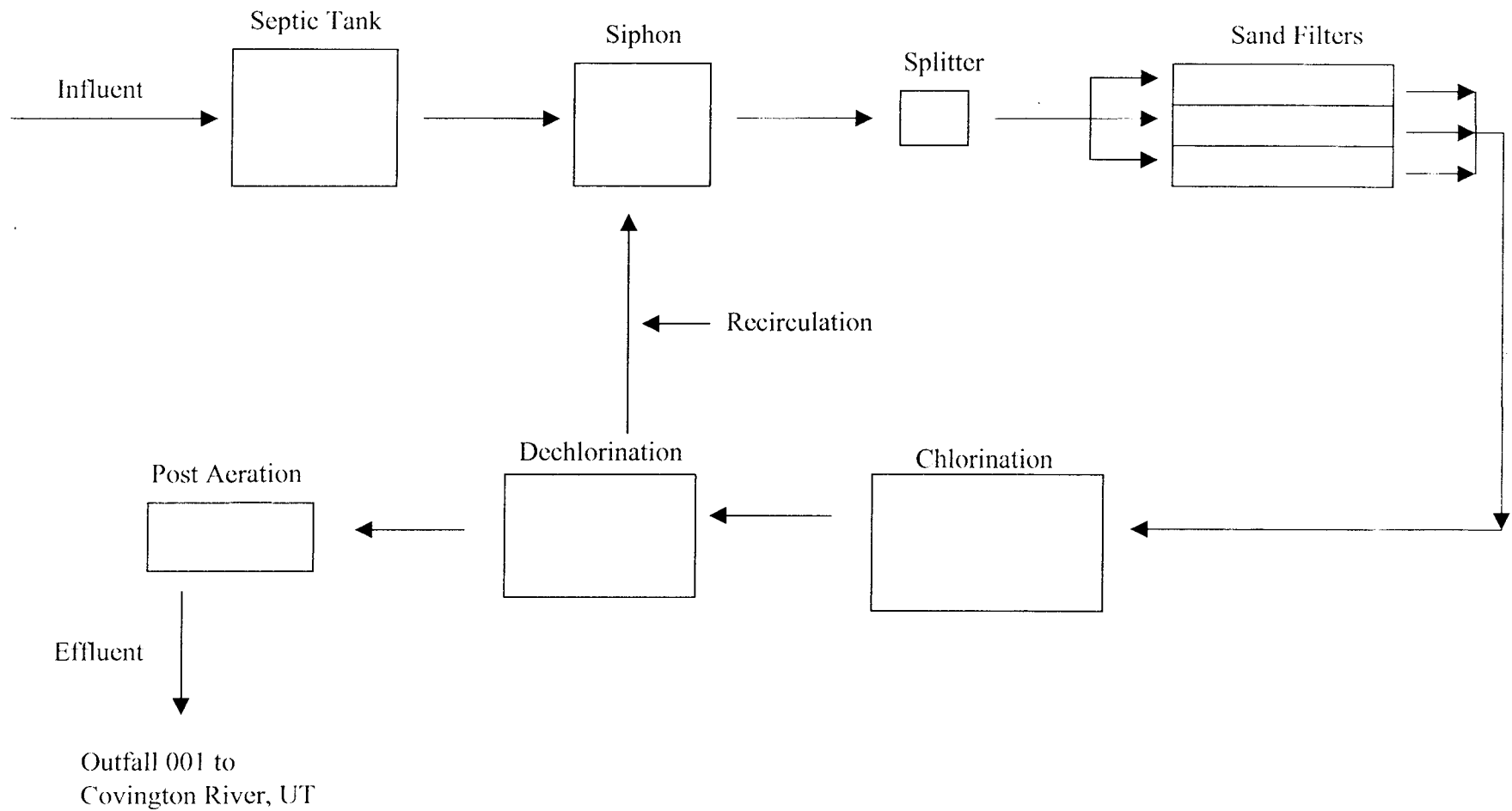
UT to Covington River at perennial point:

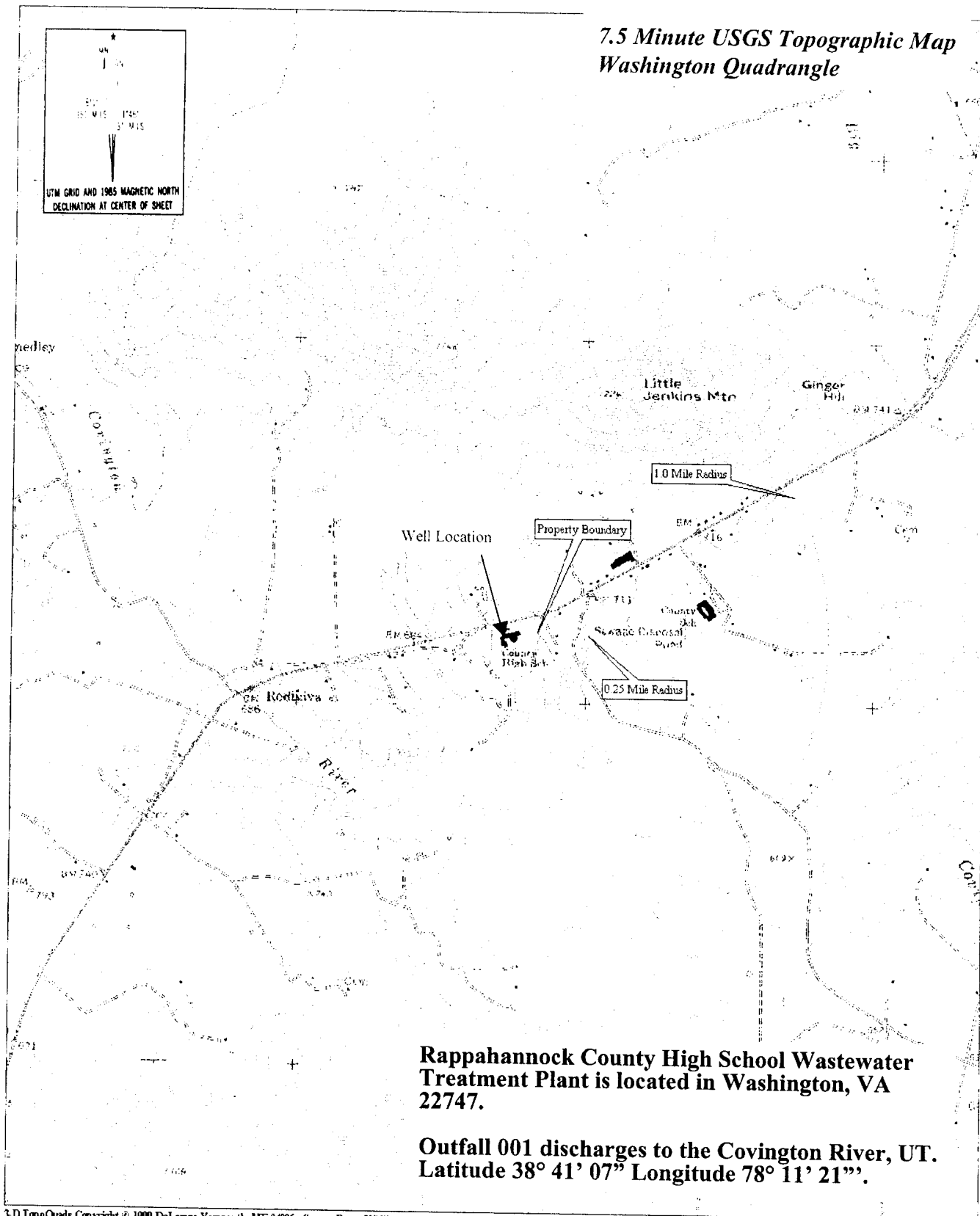
	Drainage Area = 0.57 mi ²	
1Q10 = 0.0 cfs		High Flow 1Q10 = 0.054 cfs
7Q10 = 0.0 cfs		High Flow 7Q10 = 0.070 cfs
30Q5 = 0.013 cfs		HM = 0.0 cfs

The high flow months are December through May.

If you have any questions concerning this analysis, please, give me a call.

Flow Diagram for Rappahannock County High School





**Summary of conditions from last inspection
(June 15, 2005)**

Problem identified	Corrected	Not Corrected
1. Grass clippings were blown in the chlorine contact tank during mowing.	<input checked="" type="checkbox"/> [X]	<input type="checkbox"/> []

Summary of conditions for current inspection

Comments:

- The grass was properly maintained inside the fenced treatment plant area.
- I noticed several septic tank lids and dosing tank lids appeared to have missing corners or edging. Mr. Keyser said at one time chemicals were added by hand at those locations. They now use a chemical pump for uniform feed rates.
- These eroded areas could allow small animal entry and subsequent drowning, direct inflow, or intentional contamination of the system.
- The sand filters had piles of waste sand in the corners.
- During the inspection, one sand filter appeared to be receiving the majority of the flow. Mr. Keyser said he did not have information on how the flow was being split between the filters.
- The filters had evidence of ponded water and media erosion since the pipes are manually relocated instead of an uniform flow distribution mechanism.
- The chlorine contact tank and dechlorination unit were covered with fine opening plastic grate to prevent debris from falling into the water.
- I spoke to Mr. Jenkins by telephone on May 28 to discuss the sand filters. He said the waste sand was currently piled in the corners of the filters, but would be removed during summer break.
- Summer maintenance on the filters will include checking the piping to create a better flow distribution.

Recommendations for action:

1. Please repair or replace the damaged lids for the septic tanks and dosing tank.
2. Please have appropriate maintenance performed on the sand filters. DEQ would appreciate a summary of scheduled repairs including flow distribution improvements and filter sand replacement or regeneration.
3. Please establish and maintain a path to the outfall where it enters the receiving stream.

To: Anna Westernik
From: Jennifer O'Reilly

Date: February 20, 2009
Subject: Planning Statement for the Rappahannock Co. HS
Permit No: VA0064181

Discharge Type: Municipal
Discharge Flow: 0.005 MGD

Receiving Stream: Covington River, UT
Latitude / Longitude: 38° 41' 05" / 78° 11' 25"
Waterbody ID: RA12, E06R
Drainage Area: 357.0 acres, 0.56 mi²

1. Is there monitoring data for the receiving stream?

There is no monitoring data for receiving stream, unnamed tributary to Covington River.

- If yes, please attach latest summary.
- If no, where is the nearest downstream monitoring station.

The Covington River flows into the Rush River, which in turn flows into the Thornton River. The nearest downstream monitoring station is a DEQ ambient water quality station, 3-THO006.50, located on the Thornton River at the Rt. 729 bridge crossing. This monitoring station is located approximately 13.2 miles downstream of Outfall 001.

The following is a monitoring summary for station 3-THO006.50 as found in the 2008 Integrated Assessment:

Class III, Section 4.

DEQ ambient station 3-THO006.50, at Route 729.

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. The aquatic life and wildlife uses are considered fully supporting. The fish consumption use was not assessed.

2. Is the receiving stream on the current 303(d) list?

No.

- If yes, what is the impairment?

N/A

- Has the TMDL been prepared?

N/A

- If yes, what is the WLA for the discharge?

N/A

- If no, what is the schedule for the TMDL?

N/A

3. If the answer to (2) above is no, is there a downstream 303(d) listed impairment?

Yes.

- If yes, what is the impairment?

The Covington River flows into the Rush River, which in turn flows into the Thornton River. The Thornton River flows into the Hazel River, which in turns flows into the Rappahannock River.

A segment of the Thornton River, beginning at the confluence with Mill Run, at rivermile 8.65, and continuing downstream until the confluence with an unnamed tributary to the Thornton River, at rivermile 3.25 (VAN-E06R_THO02A02), is listed as not supporting the recreational use. Sufficient excursions from the instantaneous *E. coli* bacteria criterion (3 of 13 samples - 23.1%) were recorded at DEQ's ambient water quality monitoring station (3-THO006.50) at the Route 729 crossing to assess this stream segment as not supporting of the recreation use goal for the 2008 water quality assessment.

A segment of the Hazel River, beginning at the confluence with Indian River and continuing downstream until the confluence with Muddy Run (VAN-E07R_HAZ01A04), is listed as not supporting the recreational use. Sufficient excursions from the instantaneous *E. coli* bacteria criterion (6 of 16 samples - 37.5%) were recorded at DEQ's ambient water quality monitoring station (3-HAZ005.98) at the Route 625 crossing to assess this stream segment as not supporting of the recreation use goal for the 2008 water quality assessment. The segment was previously listed for a fecal coliform bacteria impairment in 2006. The *E. coli* bacteria impairment was first listed in 2006.

- Has a TMDL been prepared?

Thornton River Bacteria (*E. coli*) Impairment – No

Hazel River Bacteria (*E. coli*) Impairment – Yes; The Upper Rappahannock River TMDL was submitted to EPA and approved on 1/23/2008.

- Will the TMDL include the receiving stream?

The receiving stream assessment unit will not be included in the TMDL for the Thornton River, nor was in included in the TMDL for the Hazel River. However, it should be noted that all upstream facilities are included during WLA consideration.

- Is there a WLA for the discharge?

The Upper Rappahannock River TMDL included the Hazel River bacteria impairment. All upstream discharges were taken into account when developing the TMDL, thus, VA0064181 was given a **WLA for *E. coli* of 8.66E+9 cfu/year**.

- What is the schedule for the TMDL?

Thornton River Bacteria (*E. coli*) Impairment - TMDL due 2018.

Hazel River Bacteria (*E. coli*) Impairment - TMDL completed and EPA approved 1/23/2008.

**** Additional information on further downstream impairments:**

- Rappahannock River (VAN-E08R_RPP01A02 and VAN-E08R_RPP02A02) is listed as impaired for *E. coli*, TMDL submitted and approved by EPA 1/23/2008.
- Rappahannock River (VAN-E20E_RPP03A02, VAN-E20E_RPP02A02, VAN-E20E_RPP01A02, VAN-E21E_RPP05A02, VAN-E21E_RPP04A02, VAN-E21E_RPP03A02, VAN-E21E_RPP01A02) is listed as impaired for *E. coli* (TMDL approved by EPA 05/05/2008) and for PCBs in Fish Tissue (TMDL Due Date – 2016).

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

There are no additional conditions requested at this time.

5. Could you please calculate the drainage area at the outfall?

The drainage area at the outfall is 357.0 acres (0.56 mi²).

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Rappahannock County HS STP

Permit No.: VA0064181

Receiving Stream: Covington River, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO₃) = mg/L
 90% Temperature (Annual) = deg C
 90% Temperature (Wet season) = deg C
 90% Maximum pH = SU
 10% Maximum pH = SU
 Tier Designation (1 or 2) = 1
 Public Water Supply (PWS) Y/N? = n
 Trout Present Y/N? = n
 Early Life Stages Present Y/N? = y

Stream Flows

1Q10 (Annual) = 0 MGD
 7Q10 (Annual) = 0 MGD
 30Q10 (Annual) = 0 MGD
 1Q10 (Wet season) = 0 MGD
 30Q10 (Wet season) = 0 MGD
 30Q5 = 0 MGD
 Harmonic Mean = 0 MGD
 Annual Average = 0 MGD

Mixing Information

Annual - 1Q10 Mix = 0 %
 - 7Q10 Mix = 0 %
 - 30Q10 Mix = 0 %
 Wet Season - 1Q10 Mix = 0 %
 - 30Q10 Mix = 0 %

Effluent Information

Mean Hardness (as CaCO₃) = 50 mg/L
 90% Temp (Annual) = 21 deg C
 90% Temp (Wet season) = deg C
 90% Maximum pH = 7.16 SU
 10% Maximum pH = 6.16 SU
 Discharge Flow = 0.005 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Acrylonitrile ^c	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	--	--	na	6.6E+00
Aldrin ^c	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	3.0E+00	--	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	3.09E+01	3.62E+00	na	--	3.1E+01	3.6E+00	na	--	--	--	--	--	--	--	--	--	3.1E+01	3.6E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	3.09E+01	5.50E+00	na	--	3.1E+01	5.5E+00	na	--	--	--	--	--	--	--	--	--	3.1E+01	5.5E+00	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene ^c	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Benzidine ^c	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	--	--	na	5.4E-03
Benzo (a) anthracene ^c	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (b) fluoranthene ^c	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (k) fluoranthene ^c	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (a) pyrene ^c	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Bis(2-Chloroethyl) Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Bis(2-Chloroisopropyl) Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	--	--	na	1.7E+05
Bromoform ^c	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	--	--	na	3.6E+03
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	na	5.2E+03
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	1.8E+00	6.6E-01	na	--
Carbon Tetrachloride ^c	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	--	--	na	4.4E+01
Chlordane ^c	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	2.2E-02
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^c	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform ^c	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^c	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD ^c	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE ^c	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT ^c	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene ^c	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) ^c	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine ^c	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane ^c	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane ^c	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane ^c	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin ^c	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate ^c	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene ^c	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8- tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine ^c	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^c	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide ^c	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene ^c	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene ^c	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane																					
Alpha-BHC ^c	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorocyclohexane																					
Beta-BHC ^c	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Hexachlorocyclohexane																					
Gamma-BHC ^c (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane ^c	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene ^c	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone ^c	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine ^c	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine ^c	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine ^c	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total ^c	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol ^C	0	3.8E+00	2.9E+00	na	8.2E+01	3.8E+00	2.9E+00	na	8.2E+01	--	--	--	--	--	--	--	--	3.8E+00	2.9E+00	na	8.2E+01
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	--	--	na	4.6E+06
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity Beta and Photon Activity (mrem/yr)	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	na	1.5E+01
Strontium-90	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Tritium	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Selenium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
Silver	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	1.1E+04
Sulfate	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	1.0E+00	--	na	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tetrachloroethylene ^C	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Thallium	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Toluene	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	--	--	na	6.3E+00
Total dissolved solids	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
Toxaphene ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tributyltin	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	7.5E-03
1,2,4-Trichlorobenzene	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	6.3E-02	na	--
1,1,2-Trichloroethane ^C	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	--	--	na	9.4E+02
Trichloroethylene ^C	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	--	--	na	4.2E+02
2,4,6-Trichlorophenol ^C	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	na	8.1E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	--	--	na	6.5E+01
Vinyl Chloride ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Zinc	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	--	--	na	6.1E+01
	0	6.5E+01	6.6E+01	na	6.9E+04	6.5E+01	6.6E+01	na	6.9E+04	--	--	--	--	--	--	--	--	6.5E+01	6.6E+01	na	6.9E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.3E+03
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	5.1E-02
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

0.005 MGD DISCHARGE FLOW - STREAM MIX PER "Mix.exe"

Discharge Flow Used for WQS-WLA Calculations (MGD) 0.005					<u>Ammonia - Dry Season - Acute</u>		<u>Ammonia - Dry Season - Chronic</u>	
Stream Flows		Total Mix Flows			90th Percentile pH (SU)	7.160	90th Percentile Temp. (deg C)	21.000
<u>Allocated to Mix (MGD)</u>		<u>Stream + Discharge (MGD)</u>			(7.204 - pH)	0.044	90th Percentile pH (SU)	7.160
<u>Dry Season</u>	<u>Wet Season</u>	<u>Dry Season</u>	<u>Wet Season</u>		(pH - 7.204)	-0.044	MIN	1.877
1Q10	0.000	0.000	0.005	0.005	Trout Present Criterion (mg N/L)	20.618	MAX	21.000
7Q10	0.000	N/A	0.005	N/A	Trout Absent Criterion (mg N/L)	30.873	(7.688 - pH)	0.528
30Q10	0.000	0.000	0.005	0.005	Trout Present?	n	(pH - 7.688)	-0.528
30Q5	0.000	N/A	0.005	N/A	Effective Criterion (mg N/L)	30.873	Early LS Present Criterion (mg N/L)	3.625
Harm. Mean	0.000	N/A	0.005	N/A			Early LS Absent Criterion (mg N/L)	3.625
Annual Avg.	0.000	N/A	0.005	N/A			Early Life Stages Present?	y
							Effective Criterion (mg N/L)	3.625
<u>Stream/Discharge Mix Values</u>					<u>Ammonia - Wet Season - Acute</u>		<u>Ammonia - Wet Season - Chronic</u>	
		<u>Dry Season</u>	<u>Wet Season</u>		90th Percentile pH (SU)	7.160	90th Percentile Temp. (deg C)	0.000
1Q10 90th% Temp. Mix (deg C)		21.000	0.000		(7.204 - pH)	0.044	90th Percentile pH (SU)	7.160
30Q10 90th% Temp. Mix (deg C)		21.000	0.000		(pH - 7.204)	-0.044	MIN	2.850
1Q10 90th% pH Mix (SU)		7.160	7.160		Trout Present Criterion (mg N/L)	20.618	MAX	7.000
30Q10 90th% pH Mix (SU)		7.160	7.160		Trout Absent Criterion (mg N/L)	30.873	(7.688 - pH)	0.528
1Q10 10th% pH Mix (SU)		6.160	N/A		Trout Present?	n	(pH - 7.688)	-0.528
7Q10 10th% pH Mix (SU)		6.160	N/A		Effective Criterion (mg N/L)	30.873	Early LS Present Criterion (mg N/L)	5.505
		<u>Calculated</u>	<u>Formula Inputs</u>				Early LS Absent Criterion (mg N/L)	8.938
1Q10 Hardness (mg/L as CaCO3)		50.0	50.0				Early Life Stages Present?	y
7Q10 Hardness (mg/L as CaCO3)		50.0	50.0				Effective Criterion (mg N/L)	5.505

0.005 MGD DISCHARGE FLOW - COMPLETE STREAM MIX

Discharge Flow Used for WQS-WLA Calculations (MGD)					0.005		<u>Ammonia - Dry Season - Acute</u>				<u>Ammonia - Dry Season - Chronic</u>			
		100% Stream Flows		Total Mix Flows		90th Percentile pH (SU)		7.160		90th Percentile Temp. (deg C)		21.000		
		<u>Allocated to Mix (MGD)</u>		<u>Stream + Discharge (MGD)</u>		(7.204 - pH)		0.044		90th Percentile pH (SU)		7.160		
		<u>Dry Season</u>		<u>Wet Season</u>		<u>Dry Season</u>		<u>Wet Season</u>		MIN		1.877		
1Q10		0.000	0.000	0.005	0.005	Trout Present Criterion (mg N/L)		20.618		MAX		21.000		
7Q10		0.000	N/A	0.005	N/A	Trout Absent Criterion (mg N/L)		30.873		(7.688 - pH)		0.528		
30Q10		0.000	0.000	0.005	0.005	Trout Present?		n		(pH - 7.688)		-0.528		
30Q5		0.000	N/A	0.005	N/A	Effective Criterion (mg N/L)		30.873		Early LS Present Criterion (mg N/L)		3.625		
Harm. Mean		0.000	N/A	0.005	N/A					Early LS Absent Criterion (mg N/L)		3.625		
Annual Avg.		0.000	N/A	0.005	N/A					Early Life Stages Present?		y		
										Effective Criterion (mg N/L)		3.625		
<u>Stream/Discharge Mix Values</u>														
				<u>Dry Season</u>	<u>Wet Season</u>									
1Q10 90th% Temp. Mix (deg C)				21.000	0.000									
30Q10 90th% Temp. Mix (deg C)				21.000	0.000									
1Q10 90th% pH Mix (SU)				7.160	7.160									
30Q10 90th% pH Mix (SU)				7.160	7.160									
1Q10 10th% pH Mix (SU)				6.160	N/A									
7Q10 10th% pH Mix (SU)				6.160	N/A									
				Calculated	Formula Inputs									
1Q10 Hardness (mg/L as CaCO3) =				50.000	50.000									
7Q10 Hardness (mg/L as CaCO3) =				50.000	50.000									
						<u>Ammonia - Wet Season - Acute</u>				<u>Ammonia - Wet Season - Chronic</u>				
						90th Percentile pH (SU)		7.160		90th Percentile Temp. (deg C)		0.000		
						(7.204 - pH)		0.044		90th Percentile pH (SU)		7.160		
						(pH - 7.204)		-0.044		MIN		2.850		
						Trout Present Criterion (mg N/L)		20.618		MAX		7.000		
						Trout Absent Criterion (mg N/L)		30.873		(7.688 - pH)		0.528		
						Trout Present?		n		(pH - 7.688)		-0.528		
						Effective Criterion (mg N/L)		30.873		Early LS Present Criterion (mg N/L)		5.505		
										Early LS Absent Criterion (mg N/L)		8.938		
										Early Life Stages Present?		y		
										Effective Criterion (mg N/L)		5.505		



Virginia Department of Game and Inland Fisheries

5/11/2009 4:47:22 PM

Fish and Wildlife Information Service

VaFWIS Search Report Compiled on 5/11/2009, 4:47:22 PM

[Help](#)

Known or likely to occur within a **2 mile radius of 38,41,07. - 78,11,21.**
in **157 Rappahannock County, VA**

392 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 26) (26 species with Status* or Tier I**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
020045	FESE	I	<u>Salamander, Shenandoah</u>	Plethodon shenandoah		BOVA
040096	ST	I	<u>Falcon, peregrine</u>	Falco peregrinus		BOVA
040129	ST	I	<u>Sandpiper, upland</u>	Bartramia longicauda		BOVA
040293	ST	I	<u>Shrike, loggerhead</u>	Lanius ludovicianus	Yes	BBA,BBS,BOVA
100155	FSST	I	<u>Skipper, Appalachian grizzled</u>	Pyrgus wyandot		BOVA
040292	ST		<u>Shrike, migrant loggerhead</u>	Lanius ludovicianus migrans		BOVA
100248	FS	I	<u>Fritillary, regal</u>	Speyeria idalia idalia		BOVA
040306	SS	I	<u>Warbler, golden-winged</u>	Vermivora chrysoptera		BOVA
040266	SS	II	<u>Wren, winter</u>	Troglodytes troglodytes		BOVA
030063	CC	III	<u>Turtle, spotted</u>	Clemmys guttata		BOVA
040094	SS	III	<u>Harrier, northern</u>	Circus cyaneus		BOVA
040204	SS	III	<u>Owl, barn</u>	Tyto alba pratincola	Yes	BBA,BOVA
030012	CC	IV	<u>Rattlesnake, timber</u>	Crotalus horridus		BOVA
040264	SS	IV	<u>Creeper, brown</u>	Certhia americana		BOVA
040364	SS		<u>Dickcissel</u>	Spiza americana		BOVA
040032	SS		<u>Egret, great</u>	Ardea alba egretta		BOVA
040366	SS		<u>Finch, purple</u>	Carpodacus purpureus		BOVA
040285	SS		<u>Kinglet, golden-crowned</u>	Regulus satrapa		BOVA
040112	SS		<u>Moorhen, common</u>	Gallinula chloropus		BOVA

				cachinnans	
040262	SS		<u>Nuthatch, red-breasted</u>	Sitta canadensis	BOVA
040189	SS		<u>Tern, Caspian</u>	Sterna caspia	BOVA
040278	SS		<u>Thrush, hermit</u>	Catharus guttatus	BOVA
040314	SS		<u>Warbler, magnolia</u>	Dendroica magnolia	BOVA
050045	SS		<u>Otter, northern river</u>	Lontra canadensis lataxina	BOVA
040225		I	<u>Sapsucker, yellow-bellied</u>	Sphyrapicus varius	BOVA
040319		I	<u>Warbler, black-throated green</u>	Dendroica virens	BOVA

To view **All 392 species** [View 392](#)

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed;
FC=Federal Candidate; FS=Federal Species of Concern; SC=State Candidate; CC=Collection Concern; SS=State
Special Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High
Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier
IV - Moderate Conservation Need

[View Map of All Query Results from All
Observation Tables](#)

Anadromous Fish Use Streams

N/A

Fish Impediments (1 records)

[View Map of All
Fish Impediments](#)

ID	Name	River	View Map
83	WHIPPOORWILL DAM	TR-BIG BRANCH	Yes

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Cold Water Stream Survey (Trout Streams) Managed Trout Species

N/A

Scientific Collections (11 records)

[View Map of All Query Results
Scientific Collections](#)

Collection	Date Collected	Collector	Collection Species			View Map
			Different Species	Highest TE [*]	Highest Tier ^{**}	
307341	Jun 8 2004	STEVE MCININCH	16			Yes
300602	Jun 1 2001	ROGER B. CLAPP	2			Yes
35261	Jan 1 1978	RCS-B-SIMPSON	2			Yes
30481	Jan 1 1946	ECR-RANEY	13			Yes
23096	Jan 1 1900		1			Yes
23106	Jan 1 1900		1			Yes
23111	Jan 1 1900		1			Yes
23122	Jan 1 1900		1			Yes
23133	Jan 1 1900		1			Yes
23134	Jan 1 1900		1			Yes
23142	Jan 1 1900		1			Yes

Biologist Observations (2 records)

[View Map of All Query Results
Biologist Observations](#)

Obs ID	Date	Observer	BOVA Code	Status [*]	Tier ^{**}	Common Name	Scientific Name	View Map
1806	9/24/2000	Ron Hughes	050049			Fox, red	Vulpes vulpes fulva	Yes
1805	9/24/2000	Ron Hughes	050001			Opossum, Virginia	Didelphis virginiana virginiana	Yes

Virginia Breeding Bird Atlas Blocks (6 records)

[View Map of All Query Results
Virginia Breeding Bird Atlas Blocks](#)

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE [*]	Highest Tier ^{**}	

45184	Washington, CE	40	SS	III	Yes
45183	Washington, CW	35		IV	Yes
45182	Washington, NE	53	ST	I	Yes
45181	Washington, NW	65		IV	Yes
45186	Washington, SE	80		IV	Yes
45185	Washington, SW	52		IV	Yes

USFWS Breeding Bird Survey Routes (1 records)

[View Map of All Query Results](#)
[USFWS Breeding Bird Survey Routes](#)

BBS ID	Route Name	Breeding Bird Survey Species			View Map
		Different Species	Highest TE *	Highest Tier **	
88006	TRYME	102	ST	I	Yes

Christmas Bird Count Survey

N/A

Public Holdings:

N/A

USGS 7.5' Quadrangles:

Washington

Va. NRCS Watersheds:

UPPER THORNTON RIVER

audit no. 237044 5/11/2009 4:47:23 PM Virginia Fish and Wildlife Information Service

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Rappahannock County High School STP

VA0064181

pH & Temperature Values

(April 2008 - April 2009)

Apr-09	Date	pH Value	Temp Value
	1	6.47	11.0
	2	6.34	12.0
	3	6.43	10.0
	7	6.34	10.0
	8	6.30	10.0
	9	6.48	11.0
	21	6.42	14.0
	22	6.38	14.0
	23	6.40	16.0
	24	6.45	16.0
	28	6.44	15.0
	29	6.84	15.0
	30	6.30	14.0
Mar-09	3	6.32	8.0
	4	6.43	6.0
	5	6.39	7.0
	6	6.46	6.0
	9	6.65	10.0
	10	6.29	8.0
	11	6.54	8.0
	12	6.50	9.0
	13	6.42	10.0
	16	6.57	9.0
	17	6.47	8.0
	18	6.44	9.0
	19	6.61	10.0
	20	6.57	11.0
	23	7.24	10.0
	24	6.66	9.0
	25	7.14	9.0
	26	7.05	9.0
	27	7.34	11.0
	30	7.07	12.0
	31	6.38	12.0
Feb-09	2	6.34	4.0
	3	6.60	4.0
	4	6.64	3.0
	5	6.86	3.0
	6	6.87	3.0
	11	6.33	8.0
	12	6.16	5.0
	13	6.33	7.0
	16	6.57	5.0
	17	6.42	5.0
	19	6.21	6.0
	20	6.34	6.0
	23	6.35	5.0
	24	6.18	5.0
	25	6.33	5.0
	26	6.32	6.0

Jan-09	27	6.51	6.0
	5	6.14	6.0
	8	6.00	7.0
	9	6.00	6.0
	12	6.05	5.0
	13	6.08	5.0
	14	6.44	5.0
	15	6.20	4.0
	16	6.19	3.0
	20	6.19	3.0
	21	6.62	4.0
	22	6.55	4.0
	23	6.48	4.0
	30	6.30	3.0
Dec-08	1	6.79	13.0
	2	6.40	11.0
	3	6.33	10.0
	4	6.16	12.0
	5	6.28	9.0
	8	6.43	5.0
	9	6.37	8.0
	10	6.28	8.0
	11	6.17	9.0
	12	6.40	8.0
	15	6.27	8.0
	16	6.14	9.0
	17	6.10	8.0
	18	6.20	9.0
Nov-08	19	6.10	8.0
	3	6.31	13.0
	4	6.41	13.0
	5	6.39	14.0
	6	6.51	15.0
	7	6.45	15.0
	10	6.69	13.0
	11	6.50	13.0
	12	6.44	14.0
	13	6.63	13.0
	14	6.50	14.0
	17	6.58	13.0
	18	6.45	12.0
	19	6.43	13.0
Oct-08	20	6.71	11.0
	21	6.67	11.0
	24	6.61	10.0
	25	6.67	10.0
	1	6.53	20.0
	2	6.55	19.0
	3	6.64	18.0
	6	6.90	17.0
	7	6.67	17.0
	8	6.71	17.0

Sep-08	13	6.87	16.0
	14	6.40	17.0
	15	6.27	17.0
	2	6.37	21.0
	3	6.58	22.0
	4	6.76	22.0
	5	6.71	23.0
	8	6.61	22.0
	9	6.65	22.0
	10	6.62	22.0
	11	6.62	22.0
	12	6.55	22.0
	15	6.41	22.0
	16	6.52	22.0
	17	6.51	22.0
	18	6.45	21.0
	19	6.53	21.0
	22	6.79	19.0
	23	6.42	21.0
	24	6.62	20.0
	25	6.69	19.0
	26	6.84	19.0
	29	6.90	19.0
	30	6.54	20.0
Aug-08	25	6.33	21.0
	26	6.05	22.0
	27	6.00	22.0
	28	6.00	21.0
	29	6.02	21.0
Jun-08	2	6.21	18.0
	3	6.08	20.0
	4	6.05	20.0
	5	6.07	20.0
	6	6.04	21.0
May-08	1	7.6	14.0
	2	7.2	15.0
	5	8.0	15.0
	6	6.5	16.0
	7	6.7	17.0
	8	8.2	17.0
	9	6.6	16.0
	12	8.7	17.0
	13	8.2	14.0
	14	7.4	16.0
	15	8.2	15.0
	16	7.0	15.0
	19	7.7	16.0
	20	6.9	16.0
	21	7.3	15.0
	22	7.6	16.0
	23	8.0	16.0
	27	7.2	17.0

Apr-08

28	7.5	18.0
29	7.8	18.0
30	7.9	18.0
1	6.10	11.0
2	6.15	12.0
3	6.25	10.0
4	6.36	10.0
7	6.28	10.0
8	6.56	10.0
9	6.70	11.0
10	6.77	11.0
11	6.69	13.0
14	6.65	12.0
15	6.64	13.0
17	6.57	13.0
18	6.49	15.0
21	6.36	14.0
22	6.35	14.0
23	6.52	16.0
24	6.51	16.0
25	6.38	15.0
28	6.47	15.0
29	6.39	15.0
30	6.49	14.0

90th Percentile	7.16	21.00
10th Percentile	6.16	5.00

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Facility = Rappahannock County HS

Chemical = Ammonia

Chronic averaging period = 30

WLAa = 31

WLAc =

Q.L. = .2

samples/mo. = 2

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 9

Variance = 29.16

C.V. = 0.6

97th percentile daily values = 21.9007

97th percentile 4 day average = 14.9741

97th percentile 30 day average = 10.8544

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity

Maximum Daily Limit = 0

Average Weekly limit = 0

Average Monthly Limit = 0

The data are:

5/26/2009 4:33:00 PM

Facility = Rappahannock County HS STP

Chemical = TRC

Chronic averaging period = 4

WLAa = 19

WLAc =

Q.L. = 100

samples/mo. = 30

samples/wk. = 8

Summary of Statistics:

observations = 1

Expected Value = 200

Variance = 14400

C.V. = 0.6

97th percentile daily values = 486.683

97th percentile 4 day average = 332.758

97th percentile 30 day average = 241.210

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity

Maximum Daily Limit = 19

Average Weekly limit = 11.3335966321422

Average Monthly Limit = 9.41680211348591

The data are:

200

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Rappahannock County, Virginia.

PUBLIC COMMENT PERIOD: August 13, 2009 to 5:00 p.m. on September 12, 2009

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Rappahannock County High School Sewage Treatment Plant (Wastewater) issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Dr. Robert Chappell, Rappahannock County School Board, 12576 Lee Highway, Washington, VA 22747 – VPDES Permit VA0064181

NAME AND ADDRESS OF FACILITY: Rappahannock County High School, 6 Schoolhouse Road, Washington, VA 22747

PROJECT DESCRIPTION: The Rappahannock County School Board has applied for a reissuance of a permit for the public Rappahannock County High School Sewage Treatment Plant. The applicant proposes to release treated sewage wastewaters from a public elementary school at a rate of 0.005 million gallons per day into a water body. Sludge from the treatment process will be transferred to another sewage treatment plant for treatment. The facility proposes to release the treated sewage into an unnamed tributary of the Covington River in Rappahannock County, which is located in the Upper Thornton River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: Influent BOD₅, Effluent BOD₅, Total Dissolved Solids, Influent Ammonia as Nitrogen, Effluent Ammonia as Nitrogen, pH, Dissolved Oxygen, Total Residual Chlorine, Influent Oil and Grease, and *E. Coli*.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment.

Name: Anna Tuthill Westernik

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3837 E-mail: anna.westernik@deq.virginia.gov Fax: (703) 583-3821

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Rappahannock County High School STP
NPDES Permit Number:	VA0064181
Permit Writer Name:	Anna T. Westernik
Date:	June 9, 2009

Major [X]

Minor []

Industrial []

Municipal [X]

I.A. Draft Permit Package Submittal Includes:

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?			X
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		X
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		



Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration

	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements

	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)

	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits

	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?		X	
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?		X	
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

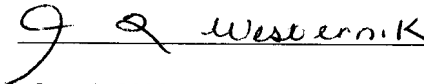
II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the “Nine Minimum Controls”?			X
b. Does the permit require development and implementation of a “Long Term Control Plan”?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?			X

II.G. Standard Conditions		Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?		X		
List of Standard Conditions – 40 CFR 122.41				
Duty to comply	Property rights	Reporting Requirements		
Duty to reapply	Duty to provide information	Planned change		
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance		
not a defense	Monitoring and records	Transfers		
Duty to mitigate	Signatory requirement	Monitoring reports		
Proper O & M	Bypass	Compliance schedules		
Permit actions	Upset	24-Hour reporting		
		Other non-compliance		
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?		X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Anna T. Westernik</u>
Title	<u>Environmental Specialist II</u>
Signature	<u></u>
Date	<u>June 9, 2009</u>